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AN APPARATUS FOR DISPENSING SOLID SOLUBLE MATERIAL INTO WATER FOR A WATERING SYSTEM

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(56) Prior Art Documents

US 4936335

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(57) Claim

1. A slow release in line dispensing device comprising a tubular body having open ends, each end having a connector attachable to a hose or pipe such that water can flow through the body, the body being formed from a clear material or having a longitudinal viewing port, and a pair of water permeable plugs slidably located within the body and able to slide along the body under water pressure, the plugs being able to move so as to keep the slow release granules in a compressed state.

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**COMPLETE SPECIFICATION
FOR A PETTY PATENT**

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Invention Title: AN APPARATUS FOR DISPENSING SOLID
SOLUBLE MATERIAL INTO WATER FOR A
WATERING SYSTEM

Details of Associated Provisional Application:

No. PN6475

The following statement is a full description of this invention
including the best method of performing it known to me:

5 This invention relates to an apparatus for dispensing solid soluble material into water for a watering system. The invention is primarily concerned with distributing a slow release fertiliser into water for a watering system and it will therefore be described in this context. The invention, however, is by no means limited to this particular use and the broader usages should be borne in mind.

10 Fertilising various forms of plant life is a common occurrence. It produces plants which are healthier, grow more quickly and produce a higher yield. For the average person, the result of fertilising is a green, healthy, lush lawn.

15 Most people who fertilise their lawns either walk around throwing fertiliser pellets onto the lawn or use a wheeled device which distributes the fertiliser pellets in an even manner. The lawn is then usually watered. The fertiliser pellets are then dissolved into the water ready for consumption by the lawn. This is a relatively time-consuming process. Further, excess fertiliser is often distributed over the lawn and therefore fertiliser is often wasted.

20 It is known to distribute fertiliser through water used in watering systems in an attempt to overcome the abovementioned problems. The device typically used for this purpose has a receptacle which holds slow release fertiliser pellets. Water is then allowed to pass over the fertiliser pellets with a small amount of fertiliser being dissolved into the water at any one time. The water is then distributed onto the lawn, fertilising the lawn. This device works relatively well in the sense that it reduces the time needed to fertilise a lawn. However, there are some disadvantages with the device. The device works well when the receptacle is full. However, when a portion of the fertiliser pellets has been dissolved, the remaining fertiliser pellets can move freely within the receptacle. Therefore, the device distributes non-even amounts of fertiliser in the water as the level of fertiliser

decreases. Another difficulty with the device is it is difficult to determine whether or not there is fertiliser within the container. Therefore, a person may think they are fertilising the lawn when in fact all they are doing is 5 watering the lawn.

It is therefore an object of the invention to provide an apparatus which will overcome the abovementioned disadvantages or provide the consumer with a useful or commercial choice.

10 In one form, the invention resides in an apparatus for dispensing solid soluble material into water for a watering system comprising:

a receptacle for holding the solid soluble material;

15 an inlet to allow the water to flow into the receptacle;

an outlet to allow the water to flow out of the receptacle;

20 means to prevent the solid soluble material from passing through the outlet but still allow water to pass through the outlet; and

at least one moveable barrier which is able to move within the receptacle;

25 wherein the moveable barrier is able to abut against the solid soluble material.

Typically, the apparatus is used on a domestic watering system. However, the apparatus may have industrial application.

30 The solid soluble material may be in pellet form. The solid soluble material may be a herbicide, an insecticide or the like material but typically is a fertiliser. A fertiliser which may be used in this apparatus is "MaCamp Plant Food" which is a commercially available slow release fertiliser.

35 The receptacle may be any size or shape. Typically the receptacle is tubular and is of a size that is suitable for a domestic gardening watering system. The receptacle may be made from any material. Typically the

receptacle is made from a plastics. The plastics material may be clear or may provide a window which is clear, so that the amount of fertiliser within the receptacle can be viewed.

5 The inlet and outlet are typically located at opposite ends of the receptacle. The inlet and outlet may be transposed. However, usually there is a dedicated inlet and outlet. The inlet and outlet may be provided with suitable connectors that allow attachment to a domestic 10 gardening watering system. The inlet may be provided with a standard female tap connector. Similarly the outlet may be provided with a standard male tap connector. The inlet and outlet may be of a similar diameter to that of a garden hose. The inlet and outlet connectors may be removably 15 attached to the receptacle to allow for simple loading of fertiliser into the receptacle.

The moveable barrier may move in any direction. Usually the moveable barrier will move in a direction substantially the same as the water flowing through the 20 apparatus. The moveable barrier may be water permeable or impermeable. Usually if the moveable barrier is water impermeable, there should be sufficient space between the sides of the receptacle and the moveable barrier to allow sufficient water to pass. The space provided between the 25 receptacle and the water barrier may be of a size that only allows small particles of fertiliser to pass between the receptacle and moveable barrier. Typically, however, the moveable barrier is water permeable. A screen or mesh material or filter material is typically used as a moveable 30 barrier.

The means which prevents the solid soluble material from passing through the outlet but still allows water to pass through the outlet may be fixed or moveable. The means may be a moveable barrier.

35 Usually there are two moveable barriers. One of the moveable barriers usually prevents fertiliser material from flowing into the watering system. The other moveable barrier is typically positioned such that the two moveable

barriers enclose the fertiliser material within the receptacle. The moveable barriers, using the flow of water, may be able to compress the fertiliser material. The compression of the fertiliser material, may allow for 5 a consistent amount of fertiliser to be dissolved into the water.

An embodiment of the invention will be described with reference to the following figure.

Figure 1 is a front view of an apparatus for 10 dispensing soluble material in water for a watering system.

Referring to Figure 1, the apparatus for dispensing solid soluble material into water for a watering system 10 comprises a receptacle 11, an outlet 12, and an inlet 13. The receptacle 11 holds fertiliser pellets 14. 15 The fertiliser pellets 14 are "MaCamp Plant Food" which is available commercially in Australia. The receptacle is a substantially cylindrical tube. It is constructed from a clear plastics material which allows the amount of fertiliser to be viewed. A level indicator 15 is provided 20 on the outer surface of the receptacle 11.

Outlet 12 is located at one end of the receptacle 11. An outlet connector 16 is attached at that end. The outlet connector 16 is threaded and is able to be screwed onto the receptacle 11. Attached to the outlet connector 25 16 is a connector hose 17. The connector hose 17 is attached to the outlet connector via a hose clip 18. A standard hose fitting 19 is connected to the connector hose 17 in a normal fashion. The standard hose tap fitting 19 can be attached to a garden nozzle in the normal fashion.

30 The inlet 13 is located at the opposite end of the receptacle 11 to that of the outlet 12. An inlet connector 20 is attached to the receptacle 11 at that end. The inlet connector 20 is threaded and can be screwed onto the receptacle 11. The inlet connector 20 is a standard 35 male tap connector and can be attached to standard female tap connectors. The outlet 12 and the inlet 13 can be transposed. That is, the outlet 12 can be used as the inlet 13 and vice versa.

Two moveable barriers 21, 22 are located within the receptacle. The moveable barrier 21, 22 are discs which are commensurate in size with the internal diameter of the receptacle 11. The moveable barriers 21, 22 are 5 water permeable. There are numerous materials which are suitable for construction of the moveable barriers 21, 22 such as a close weave material such as lycra. One of the moveable barriers 22 prevents the fertiliser pellets 14 from flowing into the watering system. The other moveable 10 barrier 21 is positioned such that the two moveable barriers 21, 22 enclose the fertiliser pellets 14 within the receptacle 11.

The apparatus 10 operates when it is attached to a pressurised water source. Water enters the inlet 13 and 15 moves into the receptacle 11. The water passes through the moveable barrier 21 and contacts the fertiliser pellets 14. A portion of the fertiliser pellets are dissolved into the water which then passes through the other moveable barrier 22. Water then passes through the outlet 12 to be 20 distributed on plant life. As the fertiliser pellets 14 are dissolved further, the water pushes against the moveable barrier 22 compressing the fertiliser pellets 14. This allows for a more even distribution of the fertiliser as the fertiliser dissipates. When the fertiliser material 25 has dissipated, this can be viewed through the receptacle 11 and can be indicated via the level indicator 15. The outlet connector 16 or the inlet connector 20 can then be unscrewed from the receptacle 11 and additional fertiliser pellets 14 can be added as required.

30 It should be appreciated that various other changes and modifications can be made to the embodiment described without departing from the spirit and scope of the invention.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A slow release in line dispensing device comprising a tubular body having open ends, each end having a connector attachable to a hose or pipe such that water can flow through the body, the body being formed from a clear material or having a longitudinal viewing port, and a pair of water permeable plugs slidably located within the body and able to slide along the body under water pressure, the plugs being able to move so as to keep the slow release granules in a compressed state.
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2. The device of claim 1, wherein the plugs are formed from plastic mesh or fibres.
3. The device of claim 1 or claim 2 substantially as hereinbefore described with reference to the drawing.

15 DATED this 9th day of September 1997

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By his Patent Attorneys
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ABSTRACT

An in line slow release fertiliser dispenser has a hollow body, end connectors to allow the device to be attached to a hose or irrigation tube, and two water permeable slidable plugs between which slow release fertiliser pellets can be placed, the plugs functioning to indicate the remaining fertiliser level and also to keep the fertiliser pellets in a compacted state to maximise pellet/ water contact as water flows through the body.

56208 | 96

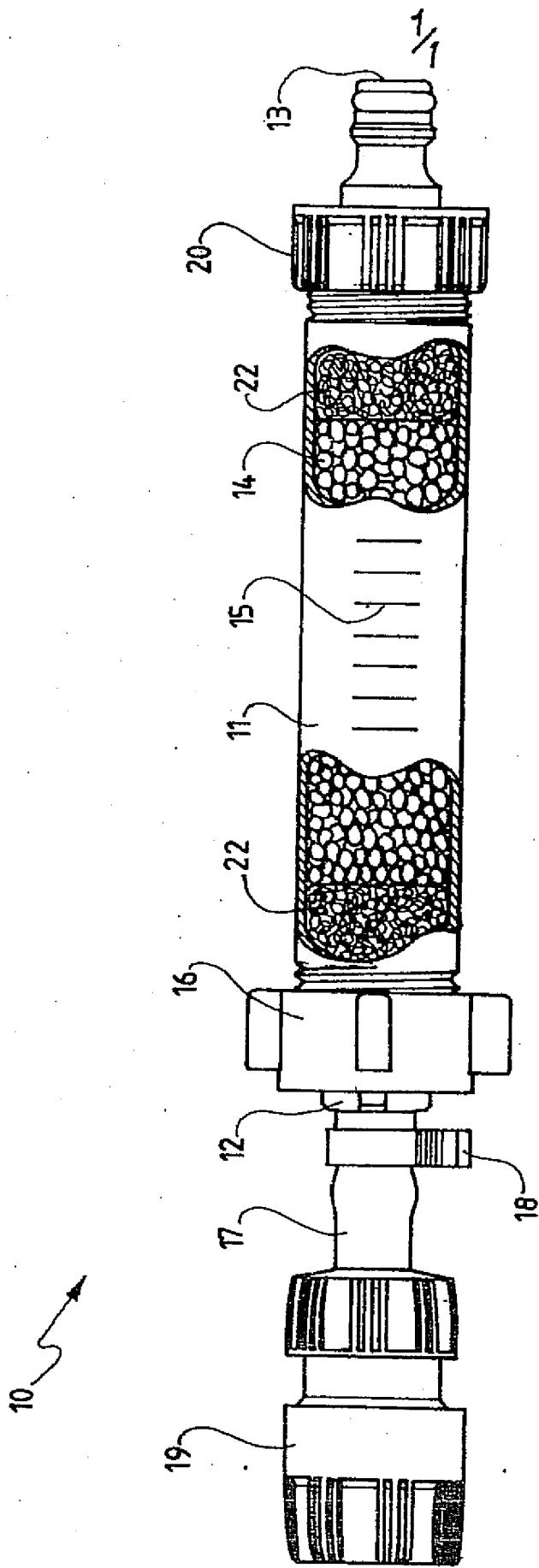


Fig. 1